AMENDMENTS TO THE SPECIFICATION:

In compliance with 37 C.F.R. § 1.823(a), please insert the attached paper copy of the "Sequence Listing" after the last page of the above-identified application to replace the Sequence Listing identified on pages 1-8 after the Figures.

Please replace paragraph **[0018]** with the following amended paragraph:

[0018] FIG. 8. Nucleotide (SEQ ID NO: 9) and amino acid (SEQ ID NO: 10-11) sequence for the fib protein gene. The box denotes a possible Shine-Dalgarno sequence. Putative promoter sequences are underlined. The vertical arrow indicates the cleavage site of the signal sequence.

Please replace paragraph **[0019]** with the following amended paragraph:

[0019] FIG. 9. Comparison of the nucleotide sequences for the fib gene from strain FDA 486 (~~ton~~ top sequence) (SEQ ID NO: 13) and strain Newman (SEQ ID NO: 12). Similarity is shown by blank spaces, differences in sequence ~~is~~ are indicated by the diverging nucleotide of the Newman fib gene.

Please replace paragraph **[0020]** with the following amended paragraph:

[0020] FIG. 10. Comparison of the amino acid sequences for the fib protein from strain FDA 486 (top sequence) (SEQ ID NO: 14) and strain Newman (SEQ ID NO: 15).

Similarity is shown by blank spaces, differences in sequence ~~is~~ are indicated by the diverging amino acid of the Newman protein

Please replace paragraph **[0021]** with the following amended paragraph:

[0021] FIG. 11. ~~sequence~~ Sequence homology between the fib protein (SEQ ID NO: 16) and the coagulase from *S. aureus*.(SEQ ID NO: 17-23). Bold letters show homologies between the two repeats in the fib protein. Shaded letters show homologies between the fib protein and coagulase.

Please replace paragraph **[0046]** with the following amended paragraph:

[0046] Thus the following nucleotide sequence (SEQ ID NO: 7) is present in the gene coding for the Efb protein:

GAGCGAAGGA TACGGTCCAA GAGAAAAGAA ACCAGTGAGT
ATTAATCACA ATATCGTAGA GTACAATGAT GGTACTTTTA
AATATCAATC TAGACCAAAA TTTAACTCAA CACCTAAATA
TATTAAATTC AAACATGACT ATAATATTTT AGAATTTAAC
GATGGTACAT TCGAATATGG TGCACGTCCA CAATTTAATA
AACCAGCAGC GAAAACTGAT GCAACTATTA AAAAAGAACA
AAAATTGATT CAAGCTCAAA ATCTTGTGAG AGAATTTGAA
AAAACACATA CTGTCAGTGC ACACAGAAAA GCACAAAAGG
CAGTCAACTT AGTTTCGTTT GAATACAAAG TGAACAAAAT
GGTCTTACAA GAGCGAATTG ATAATGTATT AAAACAAGGA
TTAGTGAGA

Please replace paragraph **[0047]** with the following amended paragraph:

[0047] whereby this nucleotide sequence encodes for the following protein (SEQ ID NO:8) starting at nucleotide 243: (In Fig. 8 nucleotides 156-242 encode a signal peptide.)

SEGYGPREKK PVSINHNIVE YNDGTFKYQS RPKFNSTPKY
IKFKHDYNIL EFNDGTFEYG ARPQFNKPAA KTDATIKKEQ
KLIQAQNLVR EFEKTHTVSA HRKAQKAVNL VSFEYKVKKM
VLQERIDNVL KQGLVR

AMENDMENTS TO THE CLAIMS:

This listing of claims will replace all prior versions, and listings, of claims in the application:

LISTING OF CLAIMS:

Claims 1-9. (Canceled)

Claim 10. (Currently amended) ~~Method~~ A method for inhibition of Staphylococci binding to fibrinogen in mammals including humans, by administering a therapeutically ~~and/or prophylactically~~ effective amount of a fibrinogen binding protein of claim 12 to a mammal in need of such treatment.

Claim 11. (Currently amended) ~~Method~~ A method for passive immunization against Staphylococcal infection, comprising administering to a mammal antibodies against a fibrinogen binding protein of claim 12 in an amount sufficient to provide passive immunization.

Claim 12. (Previously presented) A fibrinogen binding protein derived from *S. aureus* having an apparent molecular weight of 60 kDa and that produces fragments having apparent molecular weights of approximately 50, 45, 40 and 30 kDa when digested with V8 protease (40 μg/ml) for one hour on ice.

Claim 13. (Previously presented) The fibrinogen binding protein of claim 12 wherein the protein further binds prothrombin.

Claim 14. (New) A DNA encoding the fibrinogen binding protein of claim 12.

Claim 15. (New) A plasmid or phage comprising the DNA of claim 14.

Claim 16. (New) A microorganism comprising the DNA of claim 14.

Claim 17. (New) A microorganism according to claim 16, wherein said microorganism is *E. coli*.

Claim 18. (New) A composition comprising the protein of claim 12, and a carrier therefor.

Claim 19. (New) A composition according to claim 19, wherein the carrier is a pharmaceutically acceptable carrier.

Claim 20. (New) A method of diagnosing presence of Staphylococcus aureus in a biological sample comprising

immobilizing the sample on a solid carrier;

bringing serum containing a known amount of antibodies against the protein according to claim 12 into contact with the immobilized sample; and

measuring the obtained binding of the antibodies to the immobilized sample.

Claim 21. (New) A method of detecting antibodies against the protein according to claim 12, comprising the steps of

immobilizing the protein or a polypeptide fragment thereof on a solid carrier;

bringing serum susceptible of containing antibodies against the protein into contact with the immobilized protein or polypeptide; and

measuring the obtained binding of the antibodies to the immobilized protein or polypeptide.

REMARKS

Entry of the foregoing, and further and favorable reconsideration of the subject application, are respectfully requested.

The paper copy of the Sequence Listing for the subject application, is by this amendment, added after the last page of the application to replace the Sequence Listing identified on pages 1-12 after the Figures.

Applicants gratefully acknowledge the assistance of the Examiner in connection with this application. By the present Amendment, the specification has been amended to insert sequence identifiers where appropriate, and to correct minor and typographical errors. Claim 9 has been deleted without prejudice to or disclaimer of the subject matter contained therein. Claims 10 and 11 have been amended to more precisely define the subject matter claimed therein. New claims 14-21 have been added; these claims derive support from throughout the specification and claims as originally filed, especially in the following locations in the application as-filed:

- claims 1-9;
- page 6 of the specification, supporting the recitation in claim 10 that the present invention may be used prophylactically, stating, for example, that "Thus the fibrinogen binding proteins can be used in vaccination of mammals to protect against infections caused by staphylococcal infections";

- page 1 of the specification, also supporting the prophylactic use of the present invention, reciting the use of the invention in immunization, which is a preventative measure; and
- page 7 of the specification, in support of the subject matter of new claims 20-21. New claims 20-21 are directed to a method wherein a sample is taken from a subject suspected of being infected by Staphylococci, the sample being them immobilized on a solid carrier and brought into contact with antibodies against the 60 kD protein. If a binding of antibodies is observed, then the sample is positive, *i.e.*, the subject carrier the bacterium. Page 7 discusses the use of proteins to show the presence of antibodies as well as vice versa and so page 7 provides basis for new claims 20-21.

Thus, no prohibited new matter has been added by way of this Amendment.

In the event that there are any questions concerning this Amendment, or the Application in general, the Examiner is respectfully urged to telephone Applicants' undersigned representative so that prosecution of the application may be expedited.

Respectfully submitted,

BURNS, DOANE, SWECKER & MATHIS, L.L.P.

Date: September 24, 2003

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